



THE ASCE PITTSBURGH SECTION GEO-INSTITUTE CHAPTER Presents

GEOTECHNICAL CONSIDERATIONS IN THE REBUILD OF TAUM SAUK UPPER RESERVOIR DAM

Presented by: Mr. John P. Osterle, P.E., M.ASCE

Attendance at this technical presentation qualifies participants for 1.0 PDH

The rockfill rim dike forming the Upper Reservoir at the Taum Sauk Pumped Storage Project near Lesterville, Missouri failed catastrophically on December 14, 2005. The dike was founded on residual soil, weathered rock, and competent rock. After a series of comprehensive forensic evaluations performed by Paul C. Rizzo Associates, Inc. (RIZZO), Federal Energy Regulatory Commission (FERC) staff, and the FERC's Independent Panel of Consultants, a new Upper Reservoir Dam was designed and completely rebuilt as a Roller Compacted Concrete dam. The alignment of the new dam essentially follows the alignment of the original rockfill rim dike. Mr. Osterle's presentation will summarize the results of the forensic evaluation performed by RIZZO and presents the geotechnical considerations associated with the design and construction of the new dam.

Historical documents indicated that low strength clay seams are present in the foundation rock below the dam. Access conditions prevented drilling on the upstream or downstream faces of the existing rockfill dike so subsurface information over the entire footprint of the new dam was not available during the design phase. Foundation information was obtained through a subsurface investigation program that was conducted as the existing rockfill dike was removed and the foundation was exposed. The subsurface investigation program included drilling, coring, and the use of a down-hole video camera to help identify the elevation and orientation of the low strength clay seams. RIZZO performed numerous stability analyses to optimize the dam cross section and the foundation preparation requirements.

Mr. Osterle is the Vice President for Dams and Water Resources Projects at RIZZO. He has over 25 years experience on a variety of civil, geotechnical, and structural engineering projects associated with the analysis, design, permitting, and construction of dams, power plants, transportation, and other industrial facilities. Mr. Osterle served as Project Manager for the Taum Sauk Upper Reservoir Dam Project.

DINNER RESERVATIONS ARE REQUIRED – PLEASE RSVP BY Friday, April 1, 2011

Date: Wednesday, April 6, 2011

Time: 6:00 PM Open Bar
7:00 PM Dinner
8:00 PM Presentation

Place: Gaetano's Restaurant
1617 Banksville Road
Pittsburgh, PA 15216
(412) 343-6640

Cost: \$25 for members of the ASCE Pittsburgh
Section
\$35 for Non-members
Free for Student members

Contacts: Stephanie Chechak 412-922-5575
schechak@GFNET.com

Kevin Brissette 724-443-4111
kevin@rhea.us
